



Barrier sensor: Taut wire

Highly rugged. Extremely reliable.

DESCRIPTION – Senstar’s taut wire perimeter intrusion detection system is designed to detect and physically prevent intrusions by unauthorized personnel into high security sites. Its key advantage is that it has no environmental limitations and has a very high Probability of detection (Pd) and a virtual absence of false and nuisance alarms.

APPLICATION – The system consists of multiple horizontal barbed or smooth wires along a typical segment of 60 meters (196.85 ft.), connected to a sensor post located halfway between adjacent anchor posts. It is also possible to protect buildings or walled areas by mounting it on outrigger-type posts.

Features

- High Probability of detection (Pd)
- Very low Nuisance Alarm Rate (NAR)
- Very low False Alarm Rate (FAR)
- Physical intrusion barrier
- No field adjustments required
- No height or length limitations

Benefits

- Combines high-performance sensor with a physical barrier
- Low maintenance costs
- Unaffected by Electromagnetic Interference / Radio Frequency Interference (EMI / RFI)
- Operates in wide variety of environments including desert conditions, severe storms, humid climates and snow covered areas
- The system has less than 1 false alarm per kilometer per 3 months
- Constant sensitivity
- Simple integration with control unit - power and data on one cable

Markets

- Airports / ports / borders
- Energy & utilities - refineries / nuclear / chemical plants
- Military installations
- Correctional facilities
- Industrial sites

How it works

The heart of this system is an electro-mechanical sensor which, upon sensing a predetermined amount of wire deflection, sends a signal to a Sensor Post Reporting Unit (SPRU). The SPRU in turn communicates the alarm information over an RS-422 serial connection. The Security Management System (SMS) accepts the serial data, sounds an alarm and provides a clear indication of the type and location of the intrusion attempt on the display screen.

Performance

Some alarm systems have an unacceptable number of false and nuisance alarms. As a result, an alarm can be disregarded by security staff with serious results. This taut wire system is free of this problem. The system has less than one false alarm per kilometer per three months. The Probability of detection (Pd) approaches 100%. Cutting or spreading fence wires, climbing over them on a ladder or through them, cutting the communication cable or trying to tamper with the sensor causes an immediate alarm. Forces less than approximately 15 kg (33 lbs.) will not activate the sensor, and therefore, small animals such as rabbits, dogs, snakes, birds etc., will not cause false alarms.

Technical Specifications

Taut wire technology

Senstar's patented electro-mechanical sensor has a self adjustment mechanism that ignores any slow wire movements due to soil movement or temperature changes but will respond to an intrusion attempt. Its sensitivity to wire movements by intrusion attempts is factory-set and remains constant over the life of the system.

Sensors are mounted on sensor posts located halfway between adjacent anchor posts. An array of tensioned barbed (or barb less) wires are run between the anchor posts. Each wire is clamped to a sensor at the sensor post location - each of two adjacent wires are connected to one sensor. A pre-defined deflection of the wire causes an alarm. The wires are spaced sufficiently close together to make it impossible for an intruder to penetrate the array without causing an alarm. For alarm reporting purposes, the sensors in each sensor post are divided into a maximum of six (6) separate alarm groups.

The monitoring of the sensors and alarm reporting is accomplished through the state-of-the-art SPRU installed on each sensor post and linked to an SMS by a communication cable. Each sensor post is protected against tampering by a tamper proof cover which generates an alarm when removed. The tamper alarm is reported via the communications cable and can be monitored by an SMS.

Optional add-on systems

Through integration with an overall SMS, additional alarm devices, such as floodlights, sirens, CCTV cameras, etc. may be activated in response to an intrusion attempt – either manually or automatically in response to a sensor alarm. Alarm device activation can be done by using the integrated output capability of the SPRU device or by a separate output device.

Augmenting with a CCTV system controlled by an integrated SMS, security staff can visually confirm an intrusion attempt by viewing the intruder on a monitor, without having to watch that monitor constantly.

Universality

The system is unaffected by EMI / RFI or by climatic conditions. It is protected against lightning and can be supplied for any site length, terrain, reasonable system height or configuration.

SYSTEM COMPONENTS

FIELD MOUNTED EQUIPMENT

- Sensor posts
- Anchor posts
- Carrying post attachment devices
- Sliding devices and intermediate spirals
- Communications cable for connection to SPRUs
- Sensor activating wire (barbed or un-barbed)
- Tensioning and clamping accessories

TYPICAL CONFIGURATION

A typical installation consists of a 2 m (6.6 ft.) vertical component along with a 1 m (3.3 ft.) inclined outrigger with 20 taut wires on the vertical component and 10 taut wires on the inclined outrigger

SENSITIVITY: Fixed and independent of climatic conditions

DEFLECTION FORCE: 15 to 30 kg (33 to 66 lbs.) of force or more will activate an alarm

FALSE ALARM RATE (FAR): Less than one per 1 kilometer per three months

TEMPERATURE RANGE: -40° C to +72° C (-40° F to +160° F)

RELATIVE HUMIDITY: Up to 100% non condensing

RAIN, HAIL, SNOW, DUST, UV RADIATION:

- Unaffected
- Trouble and maintenance-free in desert conditions, severe storms, tropical climates and sub-zero snow covered areas

CORROSIVE ATMOSPHERE:

- Suitable for almost all environments
- A stainless steel version is available for exceptional conditions

EMI / RFI: Complies with MIL-STD-461/462

SENSOR MTBF: 25 million hours

MTTR: 30 minutes

Specifications are subject to change without prior notice.